

isc Silicon NPN Power Transistor

2SD1706

DESCRIPTION

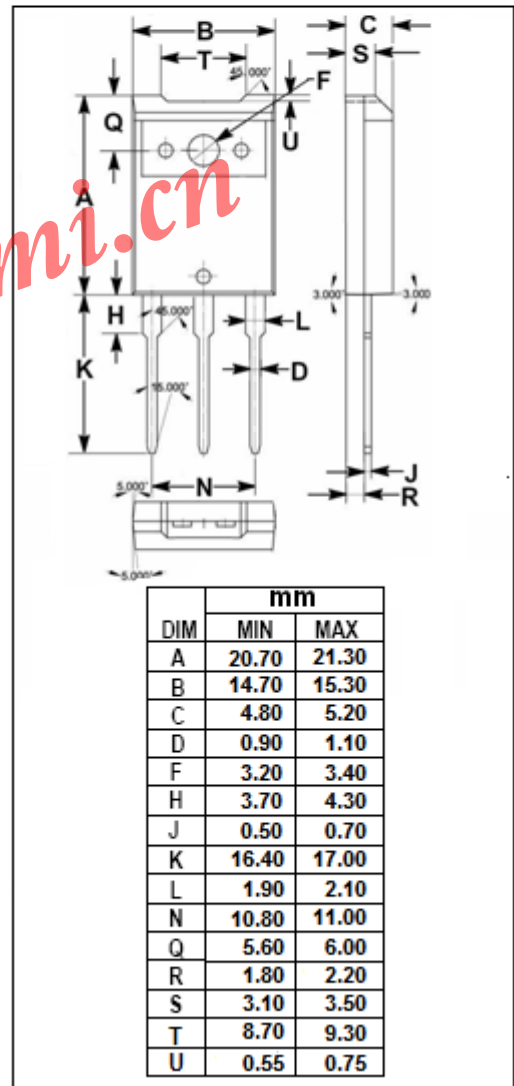
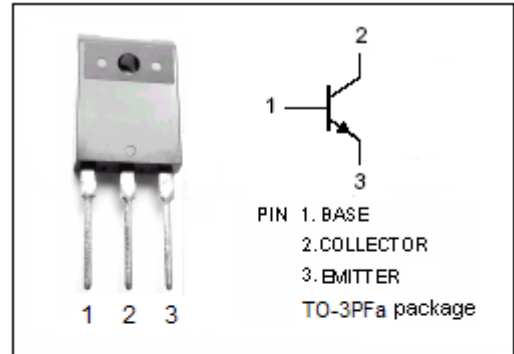
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V(\text{Min})$
- Good Linearity of h_{FE}
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.5V(\text{Max.}) @ I_C = 7A$
- Complement to Type 2SB1155

APPLICATIONS

- Designed for power switching applications

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	130	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_{CP}	Collector Current-Pulse	25	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}; I_B=0$	80			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=0.35\text{A}$			0.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}; I_B=1.5\text{A}$			1.5	V
$V_{BE(sat)-1}$	Base -Emitter Saturation Voltage	$I_C=7\text{A}; I_B=0.35\text{A}$			1.5	V
$V_{BE(sat)-2}$	Base -Emitter Saturation Voltage	$I_C=15\text{A}; I_B=1.5\text{A}$			2.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=100\text{V}; I_E=0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			50	μA
h_{FE-1}	DC Current Gain	$I_C=0.1\text{A}; V_{CE}=2\text{V}$	45			
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=2\text{V}$	60		260	
h_{FE-3}	DC Current Gain	$I_C=8\text{A}; V_{CE}=2\text{V}$	30			
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$		20		MHz

Switching Times

t_{on}	Turn-on Time	$I_C=7\text{A}, I_{B1}=-I_{B2}=0.7\text{A}$		0.5		μs
t_{stg}	Storage Time			2.0		μs
t_f	Fall Time			0.2		μs

◆ h_{FE-2} Classifications

R	Q	P
60-120	90-180	130-260